

PATENT

Attorney Docket No. 206008

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of : SAUNDERS et al

Application No.: 09/662,382

Examiner: Clinger J.

Filed: January 12 2001

Art Unit: 2821

For: **ADAPTIVE MULTIFILAR ANTENNA****CLAIMS AS AMENDED ON**

Please amend claims 1,2,7,14,15 and 22 as follows:

## Claim 1 (Amended)

An adaptive multifilar antenna comprising:

[n] a number of spaced filaments, where [n] said number is an integer greater than 1;

a matching circuit for matching the characteristic impedance of the antenna to that of a transmitting and/or receiving apparatus;

a weighting circuit operable to apply respective phase adjustments to signals passed to and/or from the [n] spaced filaments;

detecting means operable to detect at least one electrical property of the multifilar antenna with respect to the frequency, polarisation and/or direction of propagation of a signal to be received or transmitted by the multifilar antenna and/or impedance matching of the antenna; and

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control means, responsive to the detecting means, operable to control the operation of the weighting circuit to adjust the properties of the multifilar antenna to suit better a current signal to be received or transmitted.

2. (Amended)

An antenna according to claim 1, wherein the weighting circuit is operable to apply gain adjustments to signals passed to and/or from the [n] spaced filaments.

Claim 7 (Twice Amended)

An antenna according to claim 1, in which:

the detecting means is operable to detect a signal to [( ) noise plus interference  
D)] ratio of a received signal; and

the control means is operable to control the operation of the matching circuit and/or the weighting circuit so as to improve the signal to [( ) noise plus interference  
D)] ratio of the received signal.

Claim 14 (Twice Amended)

An antenna according to claim 1, in which [n] said number is an even integer.

Claim 15 (Twice Amended)

An antenna according to claim 1, in which [n] said number is equal to 4 or 6.

Claim 22 (Amended)

An adaptive multifilar antenna comprising:

[n] a number of spaced antenna filaments, where [n] said number is an integer

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greater than 1;

a matching circuit for matching the characteristic impedance of the antenna to that of a transmitting and/or receiving apparatus;

a phasing circuit for applying respective gain and phase adjustments to signals passed to or from the [n] spaced filaments;

switch means associated with each filament for selectively altering the electrical length and/or interconnections of the filaments;

means for detecting electrical properties of the multifilar antenna with respect to the frequency, polarisation and/or direction of propagation of a signal to be received or transmitted by the multifilar antenna and/or impedance matching of the antenna; and

control means, responsive to the detecting means, for controlling the operation of the matching circuit, the phasing circuit and the switch means to adjust the properties of the multifilar antenna to suit better a current signal to be received or transmitted.

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